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ABSTRACT

The first section of this manual provides information on the history of softball and the development of testing for proficiency in the game. The tests in the manual cover batting, fielding ground balls, overhand throwing, and baserunning. Test norms are listed for males and females at each grade level. A review is included of proper techniques and recommended drills for basic softball skills. Recording forms and rating scales are appended.
(JD)

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FOR BOYS AND GIRLS

SKILLS TEST MANUAL

SP 032 836

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Softball Skills Test Manual

EDITOR

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Sponsored by the

Measurement and Evaluation Council

of the

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Contents

Chapter		Page
1.	Introduction	1
	Overview of Softball	3
	History of Softball Skills Testing	3
	Development of the Manual	4
	Instructions for Using the Manual	7
	Uses and Misuses of Test Results	8
	Performance Results vs. Form	8
2.	The Tests	9
	Batting	12
	Fielding Ground Balls	14
	Overhand Throwing	16
	Baserunning	18
3.	Test Norms	19
	Use of Norms	21
	Percentile Norm Tables	22
	T-Score Norm Tables	26
4.	Basic Softball Skills: A Review of Proper Techniques and Recommended Drills	35
	Catching	37
	Fielding Fly Balls	38
	Fielding Ground Balls	38
	Overhand Throw	39
	Batting	40
	Baserunning	41
	References	45
	Appendices	49
A.	Personal Data Recording Form	51
B.	Sample Group Recording Form	52
C.	Softball Skills Rating Scales	53

CHAPTER 1

Introduction



Overview of Softball

Softball, once known by names such as indoor baseball, kittenball, and mushball, is the largest participation sport in the United States. Over thirty million Americans of all ages and abilities enjoy playing it informally at picnics and other casual gatherings and formally in official leagues, conferences, and tournaments. Softball was originated by George Hancock in 1887 as an indoor variation of the popular game of baseball. With its smaller playing dimensions and larger and softer ball, the new game soon began to appeal to increasingly larger numbers of people and by 1933 was organized by the American Softball Association into an official sport with its own standardized set of rules and regulations. The game, which consists of the basic skills of hitting, fielding, throwing, and running, includes three common variations—fast pitch softball (the standard game), twelve-inch slow pitch, and sixteen-inch slow pitch. The pitcher pitches underhand instead of overhand as in baseball, and the game consists of seven innings instead of nine. Minimum equipment requirements are a bat and a ball. However, most players use a glove or a mitt, many wear batting helmets, and catchers usually wear face masks, chest protectors, and shin guards.

History of Softball Skills Testing

Although softball is America's most popular participation sport and is commonly taught as part of the physical education curriculum from elementary school through college, little attention has been given to softball skills test development within the past thirty years. The first softball (then called playground baseball) skills test battery was a five-item test developed for fifth and sixth grade boys by

Rodgers and Heath in 1931. The first comprehensive test battery designed to measure the basic skills of softball for a wide range of age groups (grades 5-12) was the AAHPER Softball Skills Test for Boys (1965) and the AAHPER Softball Skills Test for Girls (1966). The test items included in these manuals were: overhand throw for distance, overhand throw for accuracy, underhand pitching, speed throw, fungo hitting, baserunning, fielding ground balls, and catching fly balls. The fielding ground balls test was originally developed by Mohr (1933). The majority of other tests found in the literature were designed to measure only one or two of the basic skills of softball and for only a specific category of students—usually for high school or college females.

Although the 1965/1966 AAHPER Softball Skills Test batteries have continued to be the most comprehensive tests available and are the only ones with national norms, they also are plagued with numerous flaws. The manuals contain no information on the reliability and validity of the tests. There are no age-level adjustments made within any of the tests with respect to target distances, dimensions, or ball speeds, and there are serious problems with lack of clarity in test directions and in administrative feasibility—one of the most obvious being that of requiring a two-story building from which to toss balls for the boys' catching fly balls test. Many of the other earlier tests are also of questionable value because of a lack of scientific documentation relative to their reliability and validity (O'Donnell, 1950; Rodgers & Heath, 1931; Scott & French, 1959; Thomas, 1947; Weiss, 1949). Other tests appear to meet the scientific requirements for good test development, but are limited in scope with respect to test items and/or age categories (Elrod, 1969; Fox & Young, 1954; Fringer, 1971; Kehtel, 1958; Maver, 1986; Safrit & Pavis, 1969; Shick, 1970; Sopa, 1967;

Underkofler, 1942). Clearly, there is a need for a battery of reliable and valid tests that measure the basic skills of softball for both male and female students of all ages.

Development of the Manual

Guidelines

A comprehensive review (Morris, 1977) of the original AAHPER Skills Test Series (Archery, Basketball, Football, Softball, and Volleyball) indicated that most tests were in serious need of revision. Following this review, the Measurement and Evaluation Council of AAHPERD developed a task force to coordinate the revision of these tests and, subsequently, established specific sport skills committees to conduct the revision of each separate sport skills test. The task force was responsible for the establishment of guidelines and the delineation of tasks that were to be followed by each sport skills subcommittee in the development of the various test batteries.

According to the established guidelines, the first task of each sport skills committee was to identify the basic skills that would be required by all students, regardless of age, in order to be successful in that sport. So that the battery would not require more than two class periods for administration, a maximum of four tests per battery was established. The selection of the four basic skills was to be validated by expert judgment obtained through a review of the literature and/or by direct interview. The committee's next step was to develop tests, or choose existing ones if suitable, to measure each of the four basic skills. The following guidelines, established by the task force, were to be used in selecting or developing appropriate tests. Specifically, each test should:

- have at least minimally acceptable reliability and validity.
- be simple both to administer and to take.

- have directions that are easy to understand.
- require neither expensive nor extensive equipment.
- be reasonable in terms of time with regard to both preparation and administration.
- encourage correct form and be as gamelike as possible, but involve only one performer.
- be of suitable difficulty, i.e., it should be neither so difficult that it causes discouragement nor so simple that it is not challenging.
- be interesting and meaningful to the performer.
- exclude extraneous variables as much as possible.
- provide for accurate scoring by utilizing the most precise and meaningful measure.
- follow specific guidelines if a target is the basis for scoring. The target should have a common goal with the capacity to encompass 90 percent of the attempts; near misses may need to be awarded points. The determination of target placement should be based on two principal factors. First, the development level of the student needs to be considered; e.g., the height of a given target may be appropriate for a 17-year-old but not a 10-year-old. Second, the strategical aspects of the performance should enter into the allocation of points; e.g., the placement of a badminton serve to an opponent's backhand should score higher than an equally accurate placement to the opponent's forehand.
- require a sufficient number of trials to obtain a reasonable measure of performance; those tests that have accuracy as a principal component will require

more trials than will tests measuring other characteristics.

- yield scores that provide for diagnostic interpretation whenever possible.

Additional guidelines were developed to operationally define and assure compliance with the minimally acceptable reliability and validity requirement. The reliability was to be a measure of stability. At least two, and preferably three types of validity were to be determined. Content (or logical) validity was to be established using expert judgment concerning the appropriateness of the tests. In addition, either concurrent or construct validity was to be established. If concurrent validity was to be ascertained, with a measure of the specific skill as the criterion, the minimally acceptable coefficient would be .70. In determining construct validity, a minimum acceptable significance level would be .01 for differences between skill groups. A minimum sample size of 50 per gender per age group (e.g., elementary or junior high) was to be required for all reliability and validity statistical analyses.

Following the development and validation of the four skills tests, the next step was to generate national norms. Volunteers to administer the tests were to be solicited in such a way that the total sample (600 per gender per grade level) would be selected from representative parts of the country. Norms were to be reported as both percentiles and T-scores.

The final task of the sport skills subcommittee was to prepare a test manual to be used by teachers and coaches of students in the representative age groups. Manuals already completed within the current test revision cycle are the AAHPERD Basketball Skills Test (Hopkins, Shick, & Plack, 1984) and the AAHPERD Tennis Skills Test (Hensley, 1989).

Procedures

A committee of professionals with expertise in the area of softball and measurement was established to revise, validate, and renorm the AAHPERD Softball Skills Test Battery. Following a review of the literature and consultation with numerous softball experts, four basic skills of softball were identified, along with recommendations for corresponding test items. The four basic skills identified were batting, fielding, throwing, and baserunning. More specifically, the test items were to measure batting for power and accuracy, fielding ground balls, throwing for distance and accuracy, and baserunning speed. Although the committee considers these four items to be among the most important in softball, it realizes that other important skills (e.g., catching fly balls and pitching) are not represented. The test battery was limited to only four items in order to make it possible to administer within two class periods, thus making it more practical and usable in the school setting. The purpose of the tests was to measure specific skill performance, not overall game-playing ability. The twelve-inch ball, the one most commonly used in both fast and slow pitch softball, was used during all pilot studies and norm testing.

Numerous pilot studies were conducted in the process of designing test items that would meet the guidelines established by the task force (e.g., acceptable reliability and validity, be simple both to administer and to take, require neither expensive nor extensive equipment, and require no more than two class periods to administer). In order to determine age-appropriate field dimensions, target distances, ball speeds, and scoring procedures, pilot studies were conducted for both males and females at all levels—elementary, junior high, high school, and college.

Reliability and validity coefficients were established by administering the tests in the regular school setting at the end of a softball unit to approximately 50 subjects of each gender and academic level. Teachers were given copies of the tests in advance and encouraged to use the test items as practice drills prior to the official testing days. Because the tests are designed to be as game-like as possible, this is recommended procedure whenever the tests are given. Using the tests as practice drills enhances the skills of the students, plus contributing to better organization and more efficient administration on test day.

Stability (test-retest) reliability values for male and female students at each academic level are presented in Table 1. Reliability was computed using the intraclass correlation analysis appropriate for estimating the reliability of scores collected on one day. In addition, inter-rater reliability was assessed relative to scoring on the fielding test—the test that involves the greatest amount of subjective judgment in the scoring process. Inter-rater reliability

values for trained scorers ranged from .90 to .98 on this test. It is assumed that inter-rater reliability values for the other more objective test items would be at least as high or higher.

According to the task force guidelines, at least two types of validity were to be determined. Content (or logical) validity was well-established as a result of the comprehensive review of literature and through assessment of expert opinion. Concurrent validity coefficients were determined by correlating experts' subjective ratings for each skill with the corresponding test results. As seen in Table 2, the majority of the concurrent validity values are above the required .70. In addition, construct validity was estimated by making statistical comparisons between groups of different presumed levels of ability. For example, test scores of high school female varsity softball players were compared with those of female students in a regular physical education softball class. The same comparisons were made between scores from a college women's softball team

Table 1. Intraclass stability reliability values

Grade Level	Test Items			
	Batting	Fielding	Throwing	Baserunning
Males				
5th & 6th	.85	.80	.92	.94
7th & 8th	.69	.75	.92	.94
High School	.69	.84	.96	.95
College	.73	.76	.90	.95
Females				
5th & 6th	.90	.86	.92	.89
7th & 8th	.78	.80	.94	.95
High School	.91	.89	.97	.94
College	.78	.78	.97	.94

and scores in regular college softball activities classes, and between scores for both males and females at the end of a regular college softball class and scores of a group of nonparticipants. In all cases, the mean scores on all tests for the more skilled groups were better than those of the lower skilled groups beyond the .01 level of significance.

The final procedure with respect to test development was that of establishing national norms. Normative data for the tests were collected on over 10,000 students—approximately 600 per each gender and grade level. Data were submitted from schools in 31 different states representing all regions of the country.

Table 2. Concurrent validity estimates

Grade Level	Test Items			
	Batting	Fielding	Throwing	Baserunning
Males				
5th & 6th	.81	.67	.81	.80
7th & 8th	.70	.80	.69	.79
High School	.66	.60	.77	.87
College	.54	.70	.80	.84
Females				
5th & 6th	.68	.85	.94	.84
7th & 8th	.85	.76	.65	.86
High School	.70	.77	.64	.83
College	.85	.80	.66	.92

Instructions for Using the Manual

1. Read the manual prior to testing. Become especially familiar with the purposes of the tests, the general test procedures, and uses of the test results.
2. Study each test thoroughly. Take careful note of violations and resultant penalties.
3. Take special note of all required equipment and ensure availability.
4. Use the test items as practice drills prior to test day. This enhances student skills, contributes to more efficient test administration, and increases the reliability and validity of test scores.
5. Follow special suggestions for class organization and scoring procedures.
6. Determine which norm (percentile rank or T-score) is most appropriate for your evaluation purpose and transform the raw scores to the selected derived scores.

Uses and Misuses of Test Results

Too often, physical educators do not include skills testing as part of their regular instructional programs, or if they do, they use tests only for the purpose of assigning grades. This is unfortunate, as tests have many uses and are an essential part of a quality physical education program. The following are some of the ways in which skills testing can improve the learning process:

Motivation. Test taking is a motivating experience. Evidence indicates that students try harder and learn more when they know they will be evaluated (Stanley & Hopkins, 1972). Test results also can be used to motivate students by comparing their performances to those of other students or to criterion or norm-referenced standards.

Instructional. Teachers who include testing as part of the instructional process tend to plan learning experiences, including tests, in keeping with clearly developed objectives. As a result, classes are better organized and the entire learning experience is enhanced.

Feedback. Test results provide valuable feedback regarding strengths and weaknesses of each individual student, as well as for the program as a whole. Based on the feedback received, needed adjustments can be made in the instructional process.

Diagnosis and guidance. Evaluation of students' progress helps the teacher identify special strengths, abilities, or weaknesses.

As a result, certain students might be encouraged to try more advanced skills or additional types of activities, whereas some may need to be counseled toward remedial work.

Overlearning. Practicing skills after they are learned results in what is known as "overlearning" and, consequently, in long-term retention. The repetitiveness involved in practicing skills and taking tests contributes to the overlearning process.

Grading. Grading is an important part of most physical education programs. A sound grading system should be based on objective measures that reflect instructional objectives. Using skills test results as part of students' grades is appropriate to the degree to which skill achievement is part of the course objectives. Other objectives, such as those relating to cognitive knowledge, may require additional types of assessment—usually written tests.

Performance Results vs. Form

It should be noted that skills test scores typically reflect specific performance *results*. If proper *form* or overall playing ability is to be evaluated, one should consider including rating scales as part of the evaluation process. Appendix C contains examples of rating scales for the various skill categories. These scales, which were developed based on input from nationally recognized experts in softball, served as the basis for the subjective rating scores used in the concurrent validity analysis.

CHAPTER 2

Test Items



This chapter contains descriptions of the four specific test items selected for this battery, along with recommended procedures for administration and scoring. These were the procedures followed during the testing for the national norms and, therefore, should be adhered to when making comparisons to the norm tables in Chapter 3.

Feedback regarding these tests, provided by the instructors at the 75 test-site schools used in the norm development, generally was quite positive. The major strengths, according to the instructors' comments, were that the tests appeared to be valid measures of the representative skills, that the instructions and procedures were clearly defined, and that most students found the tests to be challenging and enjoyable. The major drawback reported was that the tests were too time-consuming, particularly the batting and the fielding tests. The actual time required to administer the entire test battery, according to the instructors, ranged from two days to six days. Although the tests were designed to be capable of being administered in two class periods, it is apparent that this probably can be accomplished only under fairly ideal conditions and with careful planning and organization.

The following are suggestions provided by the test-site instructors regarding efficiency in giving the tests:

1. Utilize the help of trained assistants so that all tests can be administered

simultaneously, with students rotating from one station to another, thus minimizing waiting time. (This may be a good opportunity to utilize students in a leader's club or to call on parent or community volunteers.)

2. Students should practice taking the tests prior to test day, particularly the batting and fielding tests, so that they understand the procedures and can move through them more quickly. Also, the waiting students learn to be more helpful in shagging balls, etc.

3. Fields/testing areas must be measured and marked off prior to test day. Use white spray paint or lime to mark field areas so they do not have to be remeasured each day.

4. Arrange to have the grass freshly mowed to minimize problems with extra tall or wet grass.

5. Prepare all scoring forms in advance. In particular, develop batting scoring sheets with as many field diagrams as possible on each page (one diagram per student) to prevent extra paper shuffling. See appendix B for sample scoring diagram.

6. If possible, especially with larger classes, arrange for extended periods during the testing. (This is a good chance to let the rest of the school know that testing is important in physical education, as well. How many times have physical education periods been shortened to accommodate other school functions?)

BATTING TEST

- PURPOSE:** To measure skill involved in hitting a softball with power and placement.
- EQUIPMENT:** Standard softball field, adjustable batting tee,* bats, 8 marking cones, lime (desirable, but not essential), softballs, measuring tape.
- DIMENSIONS:** The field is marked off into 3 power zones, and into 3 placement areas—left field, center field, and right field. The 8 cones are used to mark the boundary areas. Two cones are placed at points 120' (grades 5-8) or 150' (grades 9-college) on diagonal lines drawn from home plate through points on the baseline 20' on each side of second base. Cones are also placed on these diagonal lines at points 180' (grades 5-8) or 240' (grades 9-college) from home plate. The remaining 4 cones are placed at the respective distances on the outside fair ball boundary lines. As shown on the diagram (Figure 1), the cones and the chalked or imaginary lines drawn through them separate the field into 3 power zones and 3 placement areas. The infield baseline serves as the near edge of the first scoring zone.
- PROCEDURES:** The batter assumes a normal batting stance at the plate and attempts to hit a ball off the batting tee as far as possible within the center field boundaries. The tee is adjusted to approximately waist height and placed in the center of the strike zone, opposite front hip of the batter. Each player receives 2 practice trials and 6 test trials.
- SCORING:** The player's score is the sum of the values of the zone in which the ball comes to rest (stops rolling) for the 6 test trials. See diagram for specific scoring values. A swing and a miss, balls hit into foul territory, and balls stopping within the infield baseline count 0 points.
- It is recommended that the tester stand behind second base near the center of the scoring area in order to have the best view of the scoring zones. Waiting players or student assistants should be placed in the outfield to help return balls and to help with scoring. Because this is the most time-consuming of the 4 subtests, it is desirable to have several trained assistants help with the testing. Students next in line to be tested should be used to retrieve balls being thrown in from the outfield and to position balls on the batting tee for the person being tested.

*For valid results, students should have prior experience using a batting tee. If a tee is not available, stacked cones can be used as a substitute.

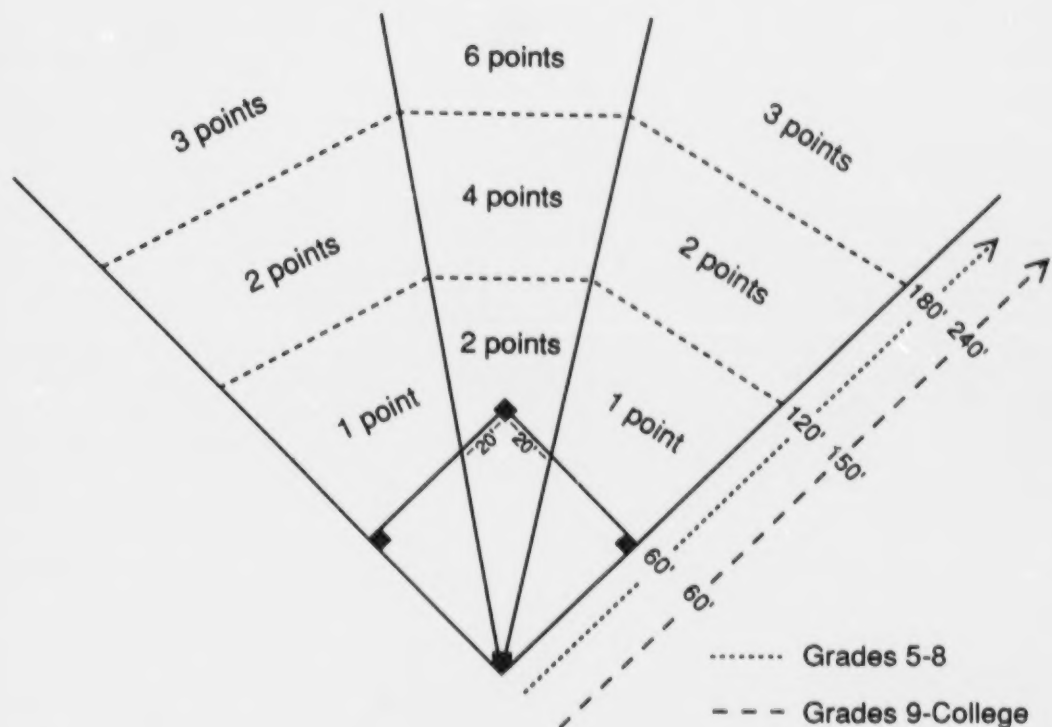
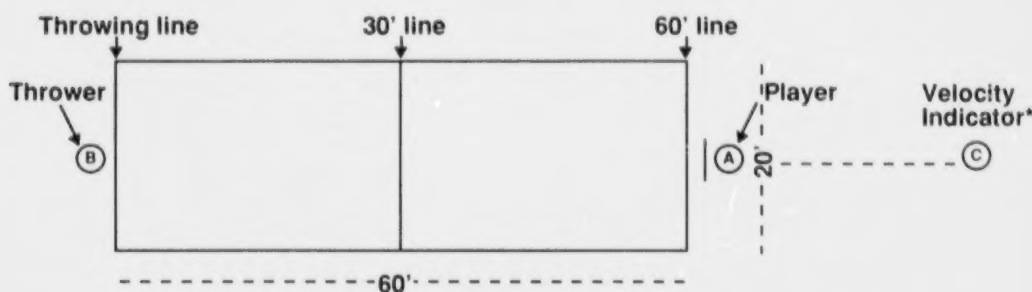


Figure 1. Field markings—Batting Test

FIELDING GROUND BALLS TEST

- PURPOSE:** To measure skill involved in fielding ground balls.
- EQUIPMENT:** A smooth field with short grass on which chalk markings or cones can be placed, softballs, gloves, measuring tape.
- DIMENSIONS:** A 20' x 60' area is marked off with a cross line or cones at 30' from the front throwing line, and with a 5' restraining line behind the 60' endline, as shown in Figure 2.
- PROCEDURES:** The player being tested stands in ready position behind a 5' restraining line (Figure 2, point A). A thrower (point B) stands behind the throwing line and throws 2 practice and 6 test balls to each player. Each throw must strike the ground before the 30' line and must stay within the sideline boundaries of the marked area. The throws should be made sidearm, with sufficient velocity to carry an untouched ball a prescribed, age-adjusted distance beyond the endline—65' (grades 5 & 6), 75' (grades 7 & 8), 90' (grades 9-12), or 100' (college students). The prescribed distance beyond the endline is marked by a cone or similar object (point C). Of the 6 test trials, 2 balls (in varying order) should be thrown directly to the player, 2 to the right (between the player and the sideline), and 2 to the left side of the player. The player attempts to field each ball cleanly, i.e., with no noticeable bobbling or temporary loss of control, and tosses it back to the thrower. On each trial the player starts behind the 5' restraining line, but must move



*Velocity indicator distances (past the 60' end line) are as follows:

- 65' - grades 5 & 6
- 75' - grades 7 & 8
- 90' - grades 9 - 12
- 100' - college

Figure 2. Field markings—Fielding Test

forward of the 60' line toward the approaching ground ball in order to obtain maximum points. Any throw not made as specified should be repeated. (Note: It is important to periodically check the velocity of the throw by occasionally instructing the player to let a ball go by untouched. Throws should be within 5-8 feet of the velocity marker.)

SCORING:

Each ball cleanly fielded in front of the 60' endline counts 4 points. A ball which is bobbled, but stopped from going past the player counts 2 points. Balls fielded behind the 60' line receive one-half the normally earned score, i.e., 2 points for cleanly fielded balls, and 1 point for bobbled balls. Balls are considered to have been fielded in front of the 60' endline when the player's glove and ball are clearly in front of the line. It is not necessary for the feet and rest of body to be in front of the line. Any ball which is missed entirely, or touched but gets past the player, scores no points. The score is the sum of all 6 trials. It is recommended that the scorer stand just outside the marked area, even with the 60' endline.

Two trained assistants, or the teacher and one assistant, are required for administration of this test. Skill and practice are required for both "scorer" and "thrower" responsibilities. (During pilot testing, we found that it worked best to use the instructor as the scorer, standing even with the 60' endline, and two or three trained students from the class rotating as throwers.)

OVERHAND THROWING TEST

- PURPOSE:** To measure skill involved in throwing a softball for distance and accuracy.
- EQUIPMENT:** A smooth grass field that can be marked off in feet, 2 measuring tapes, softballs, 2 small cones or marking stakes.
- DIMENSIONS:** A throwing line is marked off in feet (or a measuring tape is positioned) down the center of a large open field area, with a restraining line marked at one end perpendicular to the throwing line. A back boundary line is marked off 10' behind the restraining line. See Figure 3.
- PROCEDURES:** The player being tested stands between the restraining line and the back boundary line, back far enough to take one or more steps in preparation for throwing. The player, after 3-4 minutes of short-throw warmups, has 2 trials to throw the softball as far and as straight as possible down the throwing line, without stepping over the restraining line. Student assistants or other waiting players should be positioned in the field to indicate, using a cone or marking stake, the spot where each ball first touches the ground. The better of the two throws is measured and recorded as the player's score. If a player steps on or over the restraining line before releasing the ball, the trial must be repeated.
- SCORING:** The net throwing score equals the throwing distance, measured at a point on the throwing line straight across from (perpendicular to) the spot where the ball landed, minus the error distance—the number of feet the ball landed off target, away from the throwing line. The player's score is the better of two throws.* Both error scores and distance scores are measured to the nearest foot.

*With multiple trials, the average or total score normally is a more reliable indication of performance than is the best score. However, because throwing performance typically is quite reliable regardless of type of score (above 90 on this test), use of the best, or better score in this case, is being recommended because of the time saved in data recording.

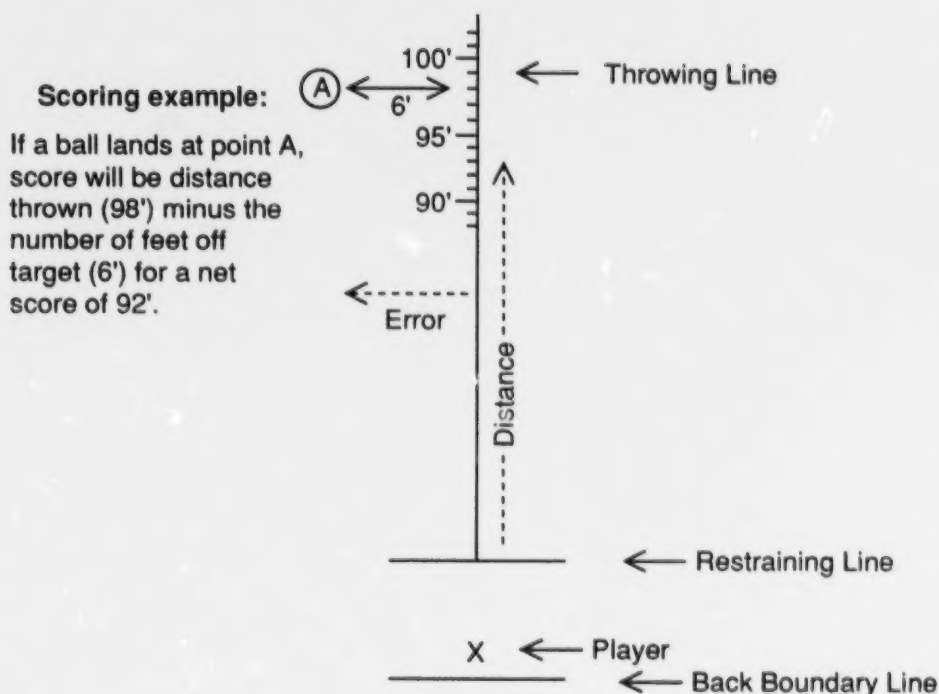


Figure 3. Field markings—Throwing Test

Scoring example: If a ball lands even with (perpendicular to) the 98' point on the measuring tape, but is 6 feet off to one side, the player's score is 92'. [Distance thrown (98') minus number of feet off target (6') results in net score of 92'.]

Scoring suggestion. Instead of actually measuring the error distance, extend a cord or rope from the distance mark on the measuring tape straight across to the exact point where the ball landed. Then, rotate the extended cord from the error point one-quarter turn down the measuring tape to get an immediate reading of the correct "net" throwing score. Use assistants or waiting students to hold and position the cord.

BASERUNNING TEST

PURPOSE:

To measure speed and skill involved in running two bases.

EQUIPMENT:

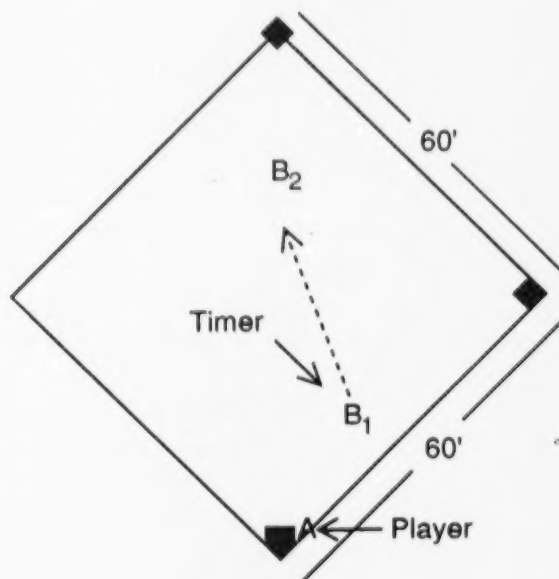
Stopwatch, standard softball field or an area marked off with 60' base paths, 3 bases. See Figure 4.

PROCEDURES:

Player takes a lead-off position in front of home plate (point A, Figure 4) with back foot in contact with the front edge of the base. On the signal "Ready, Go," the player runs to and around first base and on to second base. The player must stay within the base path and must touch first base. The player, for safety reasons, is to run through second base, rather than slide into it or stop on it. One reduced-speed practice run is given as a warm-up, followed by 2 test trials with a rest between. A player who fails to execute the test correctly must repeat the trial.

SCORING:

Trials are timed to the nearest tenth of a second from the signal "Go" to the instant the runner touches second base. The score is the better of two trials.* It is recommended that the tester/timer stand at position B₁ (Figure 4) to start the runner and to check to see that first base is touched, then move to position B₂ to time the finish.

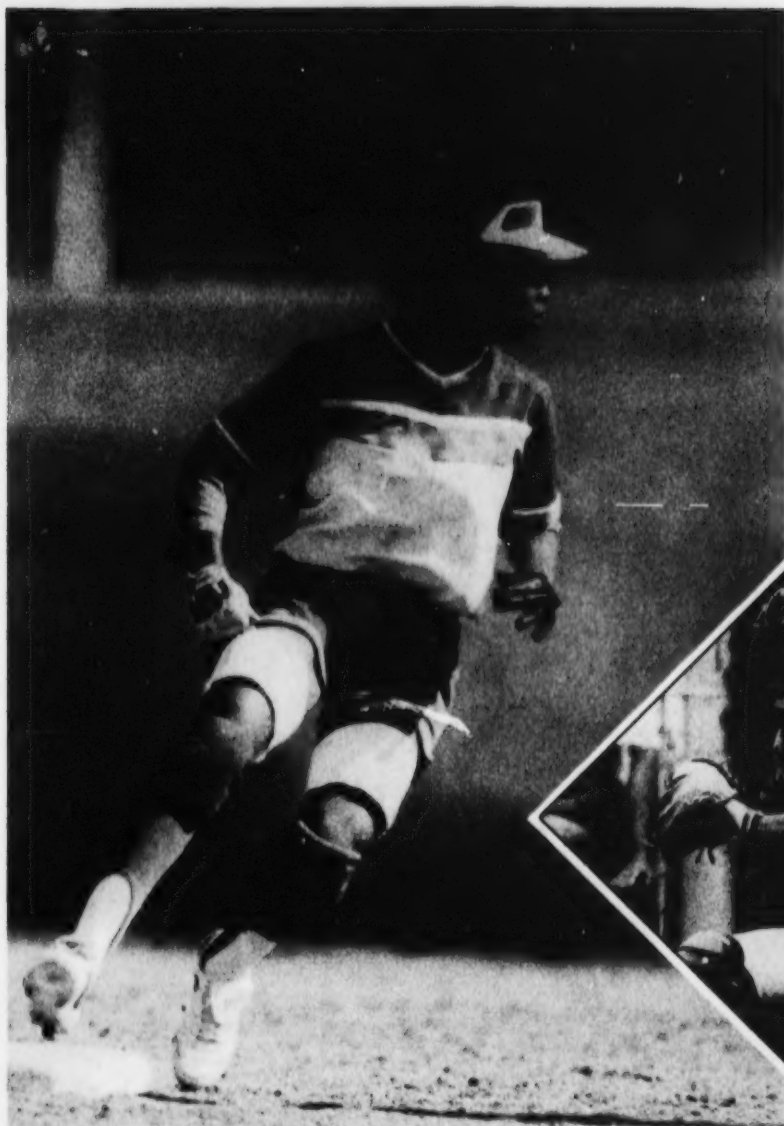


*The rationale for using the better scores on this test, instead of the average or total score, is the same as was presented for the throwing test. Because the reliability of the running test is quite high (above .90) regardless of type of scoring, the "better" score, as opposed to the normally more reliable "mean" score, is recommended due to the time saved in data recording.

Figure 4. Field markings—Baserunning Test

CHAPTER 3

Test Norms



Use of Norms

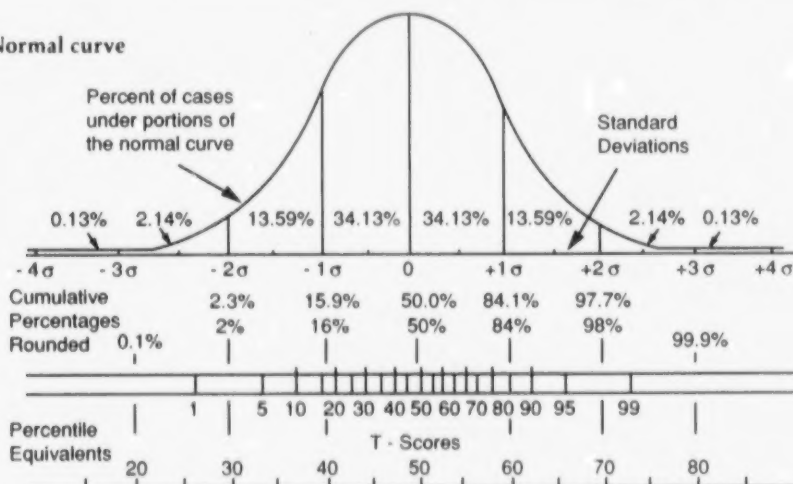
The norms for this test are based on scores collected from over 10,000 students (grades 5-college) representing 75 schools in 31 different states. Percentile norms are presented in Tables 3 through 10. Tables 11 through 18 contain T-score norms. Normative data provide information relative to the range of performance that can be expected for students of both sexes and different academic levels. The tables enable the user to compare the performance of one student with that of another of the same sex and academic level and/or to compare the performance of a given student over a period of time. Because testing typically is administered under somewhat varying conditions (different types of grass, ground firmness, wind, condition of balls, etc.), individual comparisons with norms should be interpreted as general indications of performance, not exact indications.

To convert raw scores to derived scores, select the desired table (percentile rank or T-score) for the specific test and for student gender. Locate the column that classifies the student according to academic level and, within that column, find the student's raw score. Match that score with the corres-

ponding percentile rank or T-score reported at the left of the table.

The choice of percentile ranks or T-scores should be determined by the purpose of the evaluation. Percentile-rank norms have the advantage of being more easily understood by both students and parents. If, for example, a student scores at the 80th percentile, that student's score was equal to or better than 80 percent of the students in that norm group. The T-score scale should be used if the instructor wishes to use the derived scores for further statistical manipulation, such as in combining scores for a composite battery score or for grading purposes. T-scores make it possible to combine results of two or more tests when raw scores are based upon different scales of measurement, e.g., time, distance, accuracy. The mean of the T-score distribution is 50 and its standard deviation is 10; therefore, a T-score of 60 would represent a score that is one standard deviation above the mean. Commonly, the T-score distribution ranges from 20 to 80. It is very rare to have scores that are more than three standard deviations above or below the mean. Interpretation of T-scores may be facilitated by reference to Figure 5.

Figure 5. Normal curve



22 SOFTBALL SKILLS TEST MANUAL

Table 3. Percentile norms* — Batting: Females

Grade	5	6	7	8	9	10	11/12	College
Percentile								
99	26	28	32	36	28	32	32	34
95	23	22	27	32	24	29	28	30
90	20	18	21	26	22	24	22	27
85	16	16	18	23	19	23	21	26
80	14	14	16	20	18	22	19	24
75	13	12	15	18	16	20	18	24
70	12	10	13	17	16	18	14	22
65	11	10	12	14	14	17	13	22
60	10	9	12	12	12	16	12	20
55	9	8	10	12	12	15	12	20
50	8	8	9	10	10	14	11	19
45	7	7	9	10	10	12	10	18
40	7	6	8	9	9	12	10	17
35	6	6	7	7	8	10	8	16
30	6	5	7	7	8	10	8	14
25	5	5	6	6	7	9	7	12
20	4	4	6	6	6	9	7	10
15	3	3	5	5	6	8	6	8
10	2	2	4	4	5	6	5	6
5	0	1	3	2	4	5	3	3

* Target distances are increased for grades 9-12.

Table 4. Percentile norms* — Batting: Males

Grade	5	6	7	8	9	10	11/12	College
Percentile								
99	36	36	36	36	36	36	36	36
95	32	32	36	36	33	36	32	36
90	28	30	33	34	30	34	30	34
85	24	28	31	32	28	32	28	33
80	22	26	30	30	27	31	26	32
75	21	24	29	30	26	30	24	32
70	19	22	28	28	24	28	24	30
65	18	21	26	27	23	26	24	29
60	16	20	26	26	22	26	22	29
55	15	19	24	24	20	21	22	28
50	14	18	23	23	20	23	20	26
45	13	16	21	22	19	22	20	26
40	12	15	20	20	18	20	18	24
35	11	14	18	19	17	20	18	23
30	10	12	17	18	16	19	17	22
25	9	10	16	16	14	18	16	20
20	8	9	14	15	12	16	14	19
15	7	7	12	13	10	14	13	18
10	6	6	10	12	7	12	12	16
5	3	2	8	9	5	10	10	11

* Target distances are increased for grades 9-12.

Table 5. Percentile norms* — Fielding: Females

Grade	5	6	7	8	9	10	11/12	College
Percentile								
99	24	24	24	24	24	24	24	24
95	24	24	24	24	24	24	24	24
90	24	24	24	24	24	24	24	24
85	23	23	23	23	24	24	24	24
80	22	22	21	22	22	24	22	22
75	21	20	20	22	22	22	22	22
70	19	20	20	20	20	22	22	22
65	18	18	19	20	20	22	20	20
60	18	18	18	20	20	20	20	20
55	18	18	18	18	19	20	20	20
50	18	18	17	18	18	20	18	18
45	17	17	16	18	18	20	18	18
40	16	15	16	17	16	18	18	17
35	14	14	15	16	16	18	17	16
30	14	13	14	15	14	16	16	16
25	12	11	14	14	14	14	16	14
20	10	10	12	13	12	12	14	13
15	9	8	12	12	10	12	12	12
10	8	8	10	10	9	12	11	10
5	6	6	8	8	9	10	10	8

* Ground ball velocities increase as grade level increases.

Table 6. Percentile norms* — Fielding: Males

Grade	5	6	7	8	9	10	11/12	College
Percentile								
99	24	24	24	24	24	24	24	24
95	24	24	24	24	24	24	24	24
90	24	24	24	24	24	24	24	24
85	24	24	24	24	24	24	24	24
80	24	24	24	24	24	24	24	24
75	23	22	23	23	23	24	24	24
70	22	22	22	22	22	24	23	24
65	22	22	22	22	21	22	22	22
60	22	21	22	21	20	22	22	22
55	20	20	20	20	20	22	21	22
50	20	20	20	20	20	20	20	21
45	20	20	20	20	19	20	20	20
40	19	19	20	19	19	19	20	20
35	18	18	18	18	18	18	18	19
30	17	17	18	18	17	17	18	18
25	16	16	17	16	16	16	18	18
20	14	15	16	16	14	15	16	16
15	12	12	14	14	12	12	14	16
10	10	10	12	12	10	12	12	14
5	6	8	10	10	6	10	10	12

* Ground ball velocities increase as grade level increases.

24 SOFTBALL SKILLS TEST MANUAL

Table 7. Percentile norms — Throwing: Females

Grade	5	6	7	8	9	10	11/12	College
Percentile								
99	111	109	112	137	132	167	161	180
95	87	90	99	115	110	122	140	156
90	76	82	91	102	99	110	131	147
85	69	77	85	96	92	101	119	134
80	63	72	80	90	86	95	114	127
75	59	68	75	87	82	92	108	125
70	56	73	72	83	78	86	103	121
65	53	61	69	80	75	82	98	118
60	50	58	67	75	73	78	93	112
55	48	55	65	72	70	75	90	108
50	46	53	62	70	67	72	86	104
45	44	50	60	66	64	70	83	100
40	43	47	58	63	61	67	78	98
35	41	44	55	60	59	64	74	94
30	40	42	52	57	57	62	70	91
25	38	40	50	54	54	58	66	86
20	34	38	47	51	59	55	62	79
15	32	35	45	48	48	52	58	76
10	30	32	41	44	44	49	53	69
5	26	28	34	39	40	44	47	62

Table 8. Percentile norms — Throwing: Males

Grade	5	6	7	8	9	10	11/12	College
Percentile								
99	129	188	195	218	218	229	238	268
95	118	159	166	189	197	203	210	234
90	109	146	155	170	188	192	205	218
85	106	136	148	160	179	183	195	210
80	102	130	142	152	172	175	187	204
75	99	124	136	148	166	171	182	200
70	95	120	130	143	161	167	179	196
65	92	116	127	138	158	164	174	192
60	89	111	123	134	152	162	168	187
55	87	107	120	131	148	159	163	185
50	85	102	118	126	141	155	160	180
45	81	98	114	121	138	150	155	176
40	78	95	110	120	134	145	152	173
35	75	92	107	115	130	141	149	169
30	71	87	102	111	127	137	145	164
25	68	84	98	108	120	134	140	159
20	64	80	94	104	114	130	133	155
15	60	76	90	101	110	120	123	149
10	54	72	82	95	99	110	111	142
5	50	61	72	82	79	95	94	131

Table 9. Percentile norms — Running: Females

Grade	5	6	7	8	9	10	11/12	College
Percentile								
99	7.0	6.5	6.6	6.6	6.8	6.6	6.3	6.5
95	7.3	6.8	6.9	6.8	7.0	6.8	6.4	6.7
90	7.4	7.0	7.0	6.9	7.2	6.9	6.6	6.8
85	7.5	7.1	7.1	7.0	7.2	7.0	6.7	6.9
80	7.7	7.2	7.2	7.1	7.3	7.1	6.9	6.9
75	7.8	7.3	7.3	7.2	7.4	7.2	7.0	7.0
70	7.9	7.4	7.4	7.3	7.5	7.3	7.0	7.0
65	8.0	7.4	7.5	7.3	7.6	7.4	7.1	7.1
60	8.0	7.5	7.6	7.4	7.6	7.5	7.2	7.1
55	8.1	7.6	7.7	7.5	7.8	7.6	7.4	7.2
50	8.2	7.7	7.8	7.6	7.9	7.7	7.5	7.3
45	8.3	7.8	7.9	7.7	8.0	7.8	7.6	7.4
40	8.4	8.0	8.1	7.8	8.0	7.8	7.7	7.4
35	8.5	8.1	8.2	7.9	8.2	7.9	7.9	7.5
30	8.7	8.3	8.3	8.0	8.3	8.0	8.0	7.5
25	8.8	8.5	8.4	8.2	8.4	8.2	8.0	7.7
20	9.0	8.7	8.6	8.5	8.6	8.3	8.2	7.8
15	9.2	9.0	8.8	8.8	8.9	8.6	8.5	8.0
10	9.5	9.5	9.1	9.2	9.2	9.1	8.9	8.2
5	9.9	10.4	9.9	10.0	9.9	9.8	9.8	8.5

Table 10. Percentile norms — Running: Males

Grade	5	6	7	8	9	10	11/12	College
Percentile								
99	6.5	6.4	6.1	5.9	5.9	5.9	5.6	5.7
95	6.9	6.5	6.4	6.1	6.1	6.0	5.8	5.8
90	7.0	6.7	6.5	6.2	6.2	6.1	5.9	5.6
85	7.1	6.8	6.6	6.4	6.4	6.2	6.0	5.9
80	7.2	6.9	6.7	6.4	6.4	6.2	6.1	6.0
75	7.3	7.0	6.8	6.5	6.5	6.3	6.1	6.0
70	7.4	7.1	6.9	6.6	6.6	6.4	6.2	6.1
65	7.5	7.2	7.0	6.7	6.6	6.5	6.3	6.2
60	7.6	7.3	7.1	6.8	6.7	6.5	6.3	6.2
55	7.7	7.5	7.1	6.8	6.8	6.6	6.4	6.3
50	7.8	7.5	7.3	6.9	6.9	6.6	6.4	6.3
45	8.0	7.6	7.3	7.0	6.9	6.7	6.5	6.4
40	8.0	7.8	7.4	7.0	7.0	6.8	6.5	6.5
35	8.1	7.9	7.5	7.1	7.1	6.8	6.7	6.5
30	8.3	8.0	7.7	7.2	7.1	7.0	6.7	6.6
25	8.4	8.2	7.8	7.3	7.2	7.1	6.9	6.7
20	8.7	8.4	8.0	7.5	7.4	7.2	7.0	6.8
15	8.9	8.7	8.2	7.8	7.6	7.4	7.1	6.9
10	9.3	9.2	8.6	8.3	8.0	7.8	7.6	7.2
5	11.0	10.3	9.6	9.0	9.3	9.1	8.6	7.8

26 SOFTBALL SKILLS TEST MANUAL

Table 11. T-Score norms* — Batting: Females

Grade	5	6	7	8	9	10	11/12	College
T-Scores								
80	28	28	34	36	31	34	34	36
75	27	25	31	35	28	32	30	36
70	24	21	27	31	25	29	26	34
69	23	21	26	30	24	29	26	33
68	22	20	25	29	23	28	24	32
67	22	20	25	28	23	27	24	31
66	21	19	24	27	22	26	23	31
65	20	18	23	26	22	26	22	30
64	19	18	22	26	21	25	22	28
63	19	17	21	25	20	24	21	28
62	18	16	21	25	20	24	20	27
61	17	16	20	23	19	23	20	27
60	17	15	19	22	18	22	19	26
59	16	14	18	21	18	21	18	25
58	15	14	18	20	17	21	18	24
57	15	13	17	19	16	20	17	23
56	14	12	16	18	16	19	16	23
55	13	12	15	18	15	19	16	22
54	12	11	15	17	15	18	15	21
53	12	11	14	16	14	17	14	20
52	11	10	13	15	13	16	13	19
51	10	9	12	14	13	16	13	19
50	10	9	11	13	12	15	12	18
49	9	8	11	12	11	14	12	17
48	8	7	10	11	11	13	11	16
47	7	7	9	10	10	13	10	15
46	7	6	8	9	9	12	10	15
45	6	5	8	9	9	11	9	14
44	5	5	7	8	8	11	8	13
43	5	4	6	7	7	10	8	12
42	4	4	5	6	7	9	7	11
41	3	3	5	5	6	8	6	10
40	3	2	4	4	6	8	6	10
39	2	2	3	3	5	7	5	9
38	1	1	2	2	4	6	4	8
37	0	0	1	1	4	6	4	7
36	0	0	1	0	3	5	3	6
35	0	0	0	0	2	4	2	6
34	0	0	0	0	2	3	2	5
33	0	0	0	0	1	3	1	4
32	0	0	0	0	0	1	0	3
31	0	0	0	0	0	1	0	2
30	0	0	0	0	0	0	0	2
25	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0

* Target distances are increased for grades 9-college.

Table 12. T-Score norms* — Batting: Males

Grade	5	6	7	8	9	10	11/12	College
T-Scores								
80	36	36	36	36	36	36	36	36
75	36	36	36	36	36	36	36	36
70	32	36	36	36	36	36	34	36
69	31	35	36	36	35	36	33	36
68	31	35	36	36	35	36	33	36
67	30	33	36	36	33	36	32	36
66	29	32	36	36	33	36	31	36
65	28	31	36	35	32	35	31	36
64	27	30	35	34	31	34	30	36
63	26	29	34	34	30	33	29	35
62	26	28	33	33	29	32	29	34
61	25	28	32	32	28	32	28	34
60	24	27	31	31	28	31	27	33
59	23	26	30	30	27	30	27	32
58	22	25	29	29	26	29	26	31
57	21	24	29	29	25	29	25	31
56	20	23	28	28	24	28	25	30
55	20	22	27	27	23	27	24	29
54	19	21	26	26	23	26	23	28
53	18	20	25	25	22	25	23	28
52	17	19	24	24	21	25	22	27
51	16	18	23	23	20	24	21	26
50	15	17	22	23	19	23	21	25
49	14	17	21	22	19	22	20	25
48	14	16	20	21	18	21	19	24
47	13	15	19	20	17	21	19	23
46	12	14	19	19	16	20	18	22
45	11	13	18	19	15	19	17	22
44	10	12	17	18	14	18	17	21
43	9	11	16	17	14	18	16	20
42	9	10	15	16	13	17	15	19
41	8	9	14	15	12	16	15	19
40	7	8	13	15	11	15	14	18
39	6	7	12	14	10	14	13	17
38	5	6	11	13	9	14	12	17
37	4	6	10	12	9	13	12	16
36	3	5	9	11	8	12	11	15
35	3	4	8	10	7	11	10	14
34	2	3	8	10	6	10	10	14
33	1	2	7	9	5	10	9	13
32	0	1	6	8	4	9	8	12
31	1	0	5	7	4	8	8	11
30	0	0	4	6	3	7	7	11
25	0	0	0	2	0	0	4	7
20	0	0	0	0	0	0	0	4

* Target distances are increased for grades 9-college.

28 SOFTBALL SKILLS TEST MANUAL

Table 13. T-Score norms* — Fielding: Females

Grade	5	6	7	8	9	10	11/12	College
T-Scores								
80	24	24	24	24	24	24	24	24
75	24	24	24	24	24	24	24	24
70	24	24	24	24	24	24	24	24
69	24	24	24	24	24	24	24	24
68	24	24	24	24	24	24	24	24
67	24	24	24	24	24	24	24	24
66	23	24	24	24	24	24	24	24
65	23	24	24	24	24	24	24	24
64	23	23	23	24	24	24	24	24
63	23	23	23	23	24	24	24	24
62	23	22	22	23	23	24	24	24
61	23	22	22	22	23	23	23	23
60	22	22	21	22	22	23	23	23
59	21	21	21	22	22	22	22	22
58	21	20	20	21	22	22	22	22
57	21	20	20	21	21	22	21	22
56	20	19	19	20	20	21	21	20
55	20	19	19	20	20	21	20	20
54	19	18	19	19	19	20	20	20
53	19	17	18	19	19	20	19	19
52	18	17	18	18	18	19	19	19
51	17	16	17	18	18	19	19	18
50	17	16	17	17	18	18	18	18
49	16	15	16	17	16	18	18	17
48	15	14	16	16	16	17	17	17
47	15	14	15	16	15	17	17	16
46	14	13	15	15	15	17	16	16
45	14	12	14	15	14	16	16	15
44	13	12	14	14	14	16	15	15
43	12	11	13	14	13	16	15	14
42	12	11	13	13	13	14	14	14
41	11	10	12	13	12	14	14	13
40	11	9	12	12	11	14	13	13
39	10	9	11	12	11	14	13	13
38	9	8	11	11	10	12	12	12
37	9	8	11	11	10	12	12	11
36	8	7	10	10	9	12	12	11
35	8	6	10	10	9	11	11	10
34	7	6	9	9	8	11	11	10
33	6	5	9	9	8	10	10	9
32	6	4	8	8	7	10	10	9
31	5	4	8	8	7	10	9	8
30	4	3	7	7	6	8	9	8
25	1	0	5	4	3	6	6	5
20	0	0	2	2	1	6	5	4

* Ground ball speeds increase as grade level increases

Table 14. T-Score norms* — Fielding: Males

Grade	5	6	7	8	9	10	11/12	College
T-Scores								
80	24	24	24	24	24	24	24	24
75	24	24	24	24	24	24	24	24
70	24	24	24	24	24	24	24	24
69	24	24	24	24	24	24	24	24
68	24	24	24	24	24	24	24	24
67	24	24	24	24	24	24	24	24
66	24	24	24	24	24	24	24	24
65	24	24	24	24	24	24	24	24
64	24	24	24	24	24	24	24	24
63	23	24	24	24	24	24	24	24
62	23	24	24	24	24	24	24	24
61	23	23	24	24	23	23	24	24
60	23	23	23	23	23	23	23	24
59	23	23	23	23	23	23	23	23
58	23	22	23	23	23	23	23	23
57	22	22	23	23	22	23	22	23
56	22	21	22	23	21	22	22	22
55	21	21	22	22	21	22	22	22
54	21	20	21	22	20	21	21	22
53	20	20	21	21	20	21	21	21
52	20	19	20	20	19	20	20	21
51	19	18	20	20	18	20	20	20
50	19	18	19	19	18	19	19	20
49	18	17	19	19	17	19	19	20
48	17	17	18	18	17	18	19	19
47	17	16	18	17	16	17	18	19
46	16	16	17	17	16	17	18	18
45	16	15	17	16	15	16	17	18
44	15	15	16	16	15	16	17	18
43	15	14	16	15	14	15	16	17
42	14	14	15	14	13	15	16	17
41	14	13	15	14	13	14	15	16
40	13	13	14	13	12	14	15	16
39	13	12	14	13	12	13	14	15
38	12	11	13	12	11	13	14	15
37	12	11	13	11	11	12	14	15
36	11	10	12	11	10	12	13	14
35	10	10	12	10	9	11	12	14
34	10	9	11	10	9	10	12	13
33	9	9	11	9	8	10	12	13
32	9	8	10	8	8	9	11	13
31	8	8	10	8	7	9	11	12
30	8	7	10	7	7	8	10	12
25	5	4	7	4	4	6	8	10
20	2	2	5	3	3	4	6	8

* Ground ball speeds increase as grade level increases.

30 SOFTBALL SKILLS TEST MANUAL

Table 15. T-Score norms — Throwing: Females

Grade	5	6	7	8	9	10	11/12	College
T-Scores								
80	112	118	123	138	132	155	177	184
75	100	107	112	130	124	140	161	180
70	90	96	102	117	114	128	146	163
69	87	94	100	115	111	125	144	160
68	86	92	99	114	109	123	141	159
67	83	90	96	112	107	120	138	156
66	81	88	95	109	105	117	135	153
65	80	86	93	106	103	115	132	149
64	78	84	91	104	100	112	129	147
63	76	82	89	102	98	110	127	144
62	74	79	87	100	96	107	123	141
61	72	77	85	97	94	105	120	138
60	70	75	83	95	92	102	118	135
59	68	73	81	93	89	100	115	133
58	66	71	79	90	87	97	112	129
57	64	69	77	88	85	95	109	126
56	62	67	75	86	83	92	106	123
55	60	65	73	83	81	89	103	120
54	58	63	72	81	78	87	100	118
53	56	61	70	79	76	84	97	115
52	54	59	68	76	74	82	94	112
51	52	57	66	74	72	79	92	109
50	50	55	64	72	70	77	89	106
49	48	53	62	69	67	74	86	103
48	46	51	60	67	65	71	83	100
47	44	49	58	65	63	69	80	97
46	42	47	56	62	61	66	78	94
45	40	54	54	60	59	64	74	91
44	38	43	52	58	56	61	71	88
43	36	40	50	55	54	59	68	85
42	34	38	49	53	52	56	65	81
41	32	36	47	51	50	54	63	79
40	30	34	45	48	48	51	60	77
39	28	32	43	46	46	48	57	73
38	26	30	41	44	43	46	54	71
37	25	28	39	41	41	43	51	68
36	22	26	37	39	39	41	48	68
35	21	24	35	37	37	38	45	62
34	19	22	33	35	35	36	42	57
33	17	20	31	31	32	33	40	57
32	14	18	30	30	31	32	37	52
31	14	15	28	28	31	27	33	51
30	14	15	26	28	25	27	33	49
25	14	15	26	28	25	27	33	49
20	14	15	26	28	25	27	33	49

Table 16. T-Score norms — Throwing: Males

Grade	5	6	7	8	9	10	11/12	College
T-Scores								
80	136	202	201	227	228	235	246	280
75	136	182	184	208	228	235	246	260
70	127	165	171	192	212	215	228	244
69	124	163	170	189	210	213	225	239
68	122	160	165	186	204	211	223	237
67	120	156	164	182	201	206	220	234
66	118	154	162	179	198	203	217	231
65	116	151	160	176	194	201	211	228
64	113	148	157	174	191	198	208	225
63	111	145	155	170	188	195	205	221
62	109	143	153	167	185	191	201	218
61	107	139	150	164	180	187	197	215
60	105	136	147	161	177	185	195	212
59	103	132	145	157	174	181	190	209
58	101	130	141	154	171	178	187	205
57	98	127	138	151	167	175	184	202
56	97	124	136	148	163	172	180	199
55	94	121	133	145	160	168	177	196
54	92	118	130	142	157	165	173	193
53	90	115	127	139	153	162	170	190
52	88	112	124	136	150	158	166	187
51	86	109	121	133	146	155	163	184
50	83	106	118	130	143	152	159	181
49	81	103	115	126	139	149	156	177
48	79	100	112	123	136	146	152	174
47	77	97	109	120	132	142	149	171
46	75	94	106	117	129	139	145	168
45	73	91	104	114	125	136	142	165
44	71	88	101	111	122	133	138	162
43	68	85	98	108	118	129	135	159
42	66	82	95	105	115	126	131	156
41	64	79	92	101	111	123	128	152
40	62	76	89	98	109	120	124	149
39	60	73	86	95	104	117	122	146
38	58	70	83	92	101	113	117	143
37	56	67	80	89	97	110	114	140
36	54	64	77	87	93	106	110	137
35	51	61	74	83	91	102	107	135
34	50	57	72	80	87	99	105	131
33	47	55	69	76	81	97	99	126
32	45	52	68	74	80	95	96	124
31	41	49	63	70	78	90	93	120
30	39	46	60	67	72	87	90	119
25	30	46	45	54	56	69	72	101
20	20	46	45	54	56	69	54	101

32 SOFTBALL SKILLS TEST MANUAL

Table 17. T-Score norms — Running: Females

Grade	5	6	7	8	9	10	11/12	College
T-Scores								
80	6.7	6.0	5.8	5.6	6.0	5.5	5.9	6.0
75	6.7	6.0	5.8	5.6	6.0	5.8	5.9	6.0
70	6.7	6.0	6.2	6.1	6.4	6.1	5.9	6.3
69	6.8	6.1	6.2	6.1	6.4	6.2	5.9	6.3
68	6.9	6.2	6.3	6.2	6.5	6.3	6.0	6.4
67	6.9	6.3	6.4	6.3	6.6	6.4	6.1	6.4
66	7.0	6.4	6.5	6.3	6.7	6.4	6.1	6.5
65	7.1	6.4	6.6	6.4	6.7	6.5	6.2	6.5
64	7.2	6.4	6.7	6.5	6.8	6.6	6.3	6.6
63	7.2	6.6	6.7	6.6	6.9	6.7	6.4	6.6
62	7.3	6.7	6.8	6.7	7.0	6.7	6.5	6.7
61	7.4	6.8	6.9	6.7	7.0	6.8	6.6	6.7
60	7.5	6.9	7.0	6.8	7.1	6.9	6.6	6.8
59	7.5	7.0	7.1	6.9	7.2	7.0	6.7	6.8
58	7.6	7.1	7.1	7.0	7.3	7.0	6.8	6.9
57	7.7	7.2	7.2	7.1	7.3	7.1	6.9	6.9
56	7.8	7.2	7.3	7.2	7.4	7.2	7.0	7.0
55	7.8	7.3	7.4	7.2	7.5	7.2	7.0	7.0
54	7.9	7.4	7.5	7.3	7.6	7.3	7.1	7.1
53	8.0	7.5	7.5	7.4	7.6	7.4	7.2	7.1
52	8.0	7.6	7.6	7.5	7.7	7.5	7.3	7.2
51	8.1	7.7	7.7	7.6	7.8	7.5	7.4	7.2
50	8.2	7.8	7.8	7.6	7.9	7.6	7.5	7.3
49	8.3	7.9	7.9	7.7	7.9	7.7	7.5	7.3
48	8.3	8.0	7.9	7.8	8.0	7.8	7.6	7.4
47	8.4	8.0	8.0	7.9	8.1	7.8	7.7	7.4
46	8.5	8.1	8.1	8.0	8.2	7.9	7.8	7.5
45	8.6	8.2	8.2	8.0	8.2	8.0	7.9	7.5
44	8.6	8.3	8.3	8.1	8.3	8.1	7.9	7.6
43	8.7	8.4	8.3	8.2	8.4	8.1	8.0	7.6
42	8.8	8.5	8.4	8.3	8.5	8.2	8.1	7.7
41	8.9	8.6	8.5	8.4	8.5	8.3	8.2	7.8
40	8.9	8.7	8.6	8.5	8.6	8.4	8.3	7.8
39	9.0	8.7	8.6	8.5	8.7	8.4	8.3	7.8
38	9.1	8.8	8.7	8.6	8.7	8.5	8.4	7.9
37	9.1	8.9	8.8	8.7	8.8	8.6	8.5	7.9
36	9.2	9.0	8.9	8.8	8.9	8.6	8.6	8.0
35	9.3	9.1	9.0	8.9	9.0	8.7	8.7	8.0
34	9.4	9.2	9.0	8.9	9.0	8.8	8.7	8.1
33	9.4	9.3	9.1	9.0	9.1	8.9	8.8	8.1
32	9.5	9.4	9.2	9.1	9.2	9.0	8.9	8.2
31	9.6	9.5	9.3	9.2	9.3	9.0	9.0	8.2
30	9.7	9.5	9.4	9.3	9.3	9.1	9.1	8.3
25	10.0	10.0	9.8	9.7	9.7	9.5	9.5	8.5
20	10.4	10.4	10.2	10.1	9.7	9.9	9.9	8.8

Table 18. T-Score norms — Running: Males

Grade	5	6	7	8	9	10	11/12	College
T-Scores								
80	5.8	5.8	5.8	5.6	5.6	5.4	5.3	5.1
75	5.8	5.8	5.8	5.6	5.6	5.4	5.3	5.1
70	5.8	5.8	5.8	5.6	5.6	5.4	5.3	5.4
69	5.9	5.8	5.8	5.6	5.6	5.5	5.3	5.4
68	6.0	5.9	5.9	5.7	5.7	5.6	5.4	5.5
67	6.1	6.0	6.0	5.7	5.7	5.6	5.4	5.5
66	6.2	6.1	6.1	5.8	5.8	5.7	5.5	5.6
65	6.3	6.2	6.1	5.9	5.9	5.7	5.6	5.6
64	6.4	6.3	6.2	5.9	5.9	5.8	5.6	5.7
63	6.5	6.4	6.3	6.0	6.0	5.9	5.7	5.7
62	6.6	6.5	6.3	6.1	6.1	5.9	5.7	5.8
61	6.7	6.6	6.4	6.1	6.1	6.0	5.8	5.8
60	6.8	6.6	6.5	6.2	6.2	6.0	5.8	5.9
59	6.9	6.7	6.6	6.3	6.3	6.1	5.9	5.9
58	7.0	6.8	6.6	6.3	6.3	6.2	6.0	5.9
57	7.1	6.9	6.7	6.4	6.4	6.2	6.0	6.0
56	7.2	7.0	6.8	6.5	6.5	6.3	6.1	6.0
55	7.3	7.1	6.9	6.6	6.5	6.3	6.1	6.1
54	7.4	7.2	6.9	6.6	6.6	6.4	6.2	6.1
53	7.5	7.3	7.0	6.3	6.7	6.5	6.3	6.2
52	7.6	7.4	7.1	6.8	6.7	6.5	6.3	6.2
51	7.7	7.4	7.2	6.8	6.8	6.6	6.4	6.3
50	7.8	7.5	7.2	6.9	6.9	6.7	6.4	6.3
49	7.9	7.6	7.3	7.0	6.9	6.7	6.5	6.4
48	8.0	7.7	7.4	7.0	7.0	6.8	6.6	6.4
47	8.1	7.8	7.5	7.1	7.1	6.8	6.6	6.5
46	8.2	7.9	7.5	7.2	7.1	6.9	6.7	6.5
45	8.3	8.0	7.6	7.2	7.2	7.0	6.7	6.6
44	8.4	8.1	7.7	7.3	7.3	7.0	6.8	6.6
43	8.5	8.2	7.8	7.4	7.3	7.1	6.9	6.7
42	8.6	8.2	7.8	7.4	7.4	7.2	6.9	6.7
41	8.7	8.3	7.9	7.5	7.5	7.2	7.0	6.8
40	8.8	8.4	8.0	7.6	7.5	7.3	7.0	6.8
39	8.9	8.5	8.0	7.6	7.6	7.3	7.1	6.9
38	9.0	8.6	8.1	7.7	7.7	7.4	7.2	6.9
37	9.1	8.7	8.2	7.8	7.7	7.5	7.2	6.9
36	9.2	8.8	8.3	7.8	7.8	7.5	7.3	7.0
35	9.3	8.9	8.3	7.9	7.9	7.6	7.3	7.0
34	9.4	9.0	8.4	8.0	7.9	7.6	7.4	7.1
33	9.5	9.1	8.5	8.0	8.0	7.7	7.5	7.1
32	9.6	9.1	8.6	8.1	8.1	7.8	7.5	7.2
31	9.7	9.2	8.7	8.2	8.1	7.8	7.6	7.2
30	9.8	9.3	8.7	8.2	8.2	7.9	7.6	7.3
25	9.8	9.8	9.1	8.6	8.5	8.2	8.0	7.5
20	9.8	9.8	9.1	8.9	9.0	8.5	8.2	7.8

CHAPTER 4

Basic Softball Skills



A Review of Proper Techniques and Recommended Drills

Judi Garman*

Softball is a game that can be played and enjoyed by people of all ages and all skill levels. However, for maximum participation and enjoyment it is important to develop a good foundation in the basic skills of the game. This chapter briefly summarizes the basic softball skills, discusses the proper techniques for successful execution, and provides examples of recommended practice drills. Mastery of these fundamental techniques is a prerequisite to more advanced performance.

Catching

Catching, the fundamental defensive skill in softball, involves watching or tracking an oncoming ball, then moving the body and glove directly in line with it to catch it. As the ball comes toward the player, both arms are extended forward with elbows slightly flexed. The glove is held open with the bare hand partially behind it. As the ball comes into the glove the bare hand should cover it. Arms give with the ball to cushion the shock. It is important to watch the ball all the way into the glove. In softball, it is especially important to use two hands to catch the ball because the ball is large and likely to pop out of the glove if not covered. Also, the throw can be made more quickly when the bare throwing hand is immediately placed on the ball.

When catching balls above the waist, the fingers of both hands should be pointing up, thumbs together. For balls below the waist, the fingers are pointed downward with little fingers together. Players should try, whenever possible, to move into position to catch balls at chest height. More advanced players will try to catch the ball in front of the throwing shoulder.

Checkpoints

- Body in line with oncoming ball
- Glove adjusted to ball height with fingers up for above waist balls, fingers down for below waist balls
- Ball is met in front of the body
- Use two hands, cover the ball with the bare hand
- Give with the ball

Drills

1. Mental drill: Teacher calls out ball position, "above waist," "below waist." Students show proper glove position.
2. Partner drill: Partners face each other 3' apart. One player holds ball toward partner and "shows it" in various locations. Partner moves glove to proper location as if to catch it.
3. Easy toss drill: Partner or teacher tosses easy underhand throws to various locations, mixing above and below waist.
4. Quick release drill: Players form two lines 30' apart facing each other. Partners throw ball back and forth to each other as fast as possible. The first pair to complete 25 throws is the winner. This drill shows the importance of quick feet, proper body position, and using two hands for quick release.

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Fielding Fly Balls

Ideally, the player should try to get under the ball and be standing motionless as it comes down. The arms are extended out in front, elbows slightly flexed. Fingers of both hands are up, thumbs together. The receiver should look over the top of the glove to track the ball and catch it.

Drill

Students are positioned in short lines spread several feet apart. Teacher and assistants toss easy underhand fly balls to first student in each line. Student catches the ball, drops it in a bucket or basket, and goes to end of line. Use of the bucket speeds up the drill and eliminates errant return throws.

Fielding Ground Balls

In the basic stance (ready position), feet are shoulder width apart with toes slightly turned in. This helps to keep the weight on the balls of the feet. The glove-side foot is slightly ahead of the other foot in a straddle stride. Body and glove are low to the ground, knees are bent, back is flat (almost parallel to the ground). Both arms are extended forward with glove wide open and close to the ground with palms facing ball. Whenever possible, player should move to a position directly in line with the

oncoming ground ball, with glove foot forward and flat, before attempting to field it. As the ball approaches, the glove is on the ground, with eyes focused on the ball all the way into the glove. It is very important to keep the glove on the ground while waiting for the ball. If the ball bounces, the glove comes up to catch it. Most ground ball errors are balls going under the glove. If the glove is *on* the ground this will not happen.

When the ball comes into the glove it immediately should be covered with the bare hand and cushioned by bringing both hands up and back simultaneously to the belt buckle. Experienced players should move toward (charge) the ball before fielding it. When charging, however, the player should try to get to a set position with proper stance before the ball reaches the glove. "Timing" determines when the player stops charging and assumes the basic stance.

Checkpoints

- Stance: straddle stride, knees bent, back flat, glove open to the ball and low to the ground with fingers pointing down, eyes on the ball, glove foot forward
- Execution: move quickly into position to field the ball, assume correct stance, watch ball into glove, cover it with throwing hand, bring ball up and into throwing position

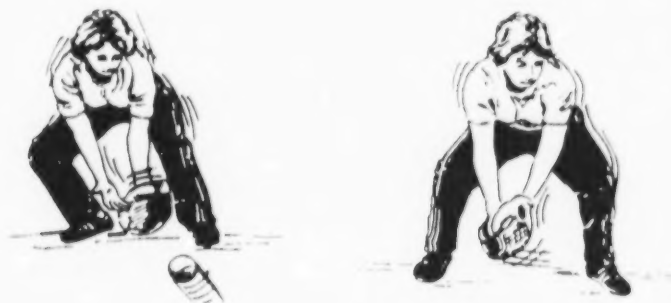


Figure 6. Fielding ground ball

Drills

1. Mental practice drill: Teacher gives the following commands with the students responding accordingly:
 - "Ready"—hands on knees.
 - "Set"—glove open toward batter, close to ground.
 - "Field"—charge the ball, glove on ground, gather ball to stomach, fake a throw.

2. Partner rolls: Partners roll ball back and forth at moderate speed to allow proper execution.

Variation #1: Glove only—bare hand is tucked behind back. Teaches proper use of glove, which must be wide open. Caution: This drill should be used sparingly, only to make a point. Extended practice with one hand emphasizes incorrect technique.

Variation #2: Bare hand only—no glove is used. Teaches soft hands, cushioning, and importance of using both hands together.

Overhand Throw

The overhand throw is the type of throw used most often in softball. It can travel greater distances and is more accurate than the other types of throws—sidearm and underhand. To grip the ball use two fingers (index and middle) and the thumb. Use only the fingers to grip the ball, not the whole hand. There should be space or daylight between the ball and the palm. For small hands, the third and fourth fingers are spread around the side and bottom of the ball for extra support. Grip the ball across its seams. Students should practice taking the ball out of the glove with the throwing hand, developing a sense of feel for the ball and the proper grip.

Arm action. The glove arm is very important for correct throwing alignment and force production. The arms work in opposition to

each other. As the ball is taken out of the glove, the player turns toward the throwing side, brings the ball back to the shoulder, and shifts weight to the back foot. Meanwhile, the glove hand is extended toward the target. After the player has extended the throwing hand all the way back, stretching the shoulder, he/she then steps forward with the opposite foot in the direction of the target. The throwing arm is brought forward, leading with the elbow. As the elbow leads the throwing arm, the glove arm is simultaneously pulled down. Keep the throwing elbow high throughout the throw. A low elbow results in sidearm throws, which cause increased strain and less accurate throws.

Release and follow-through. Throughout the throw, the wrist and arms are flexible and loose. At the point of release, a wrist snap is used to provide velocity and accuracy. The fingers are thrown (snapped) toward the target with the thumb pointed toward the ground, with the back of the hand toward the target.



Figure 7. Preparation for overhand throw

Checkpoints

- Preparation:
 - two-finger grip across seams
 - body turned toward throwing side, weight on back foot, throwing arm stretched back, glove arm pointed at target

● **Execution:**

- push off with back foot, step toward target with opposite foot
- elbow leads throwing arm, keep elbow high
- snap wrist and fingers on release

Drills

1. Fence drill: Students stand 20' to 30' away from fence and practice throwing the ball at the fence, using proper form throughout—from taking ball out of glove to the follow-through.
2. Partner drill: Students practice throwing to each other, concentrating on proper techniques for catching, taking ball from glove, turning, and throwing.
Variation: With partners 15' apart, they kneel on throwing-side knee, with other foot flat on ground. The thrower points glove at target and throws using proper arm and wrist action. This drill emphasizes importance of correct arm action for achieving force and accuracy.

Batting

Generally, hitting is the most difficult skill in the game of softball. Although players

develop many different styles of batting, the following elements are consistently accepted as the basic fundamentals and are prerequisites for more advanced skill development.

Grip: Pressure is applied by the fingers, not the palms. Grip bat where the callouses are, hands are together with dominant hand on top. The second joints of the fingers of the top hand should line up with or just past the second joints of the bottom hand fingers.

Stance: Player stands facing the plate, feet are parallel and at least shoulder distance apart. Knees are slightly flexed. Stance should be close enough to the plate to allow the bat to reach the outside corner. Hands and arms are comfortably away from the body, with hands set at top of strike zone by back shoulder.

Swing: The swing is a smooth, well-timed coiling and uncoiling around a central axis, the spine. To start the swing, bat, arms, shoulders, and hips are coiled back, with weight shifted to rear foot. Simultaneously, as front foot strides slightly toward the pitcher, the hips, shoulders, arms, and bat begin to uncoil. The uncoiling (forward swing) is begun by pushing off in a hard pivot with the inside of the back foot against a rigid, "planted" forward leg and



Figure 8. Batting preparation and execution, using batting tee

foot. Back knee rotates completely forward and points at front leg, back heel is off the ground with weight transferred toward the front foot. Balance is maintained throughout the swing and follow-through, shoulders stay as level as possible.

Contact point and follow-through: Bat should contact ball out in front, approximately opposite front hip, with bottom hand and knob of bat leading into the contact point. Hands and wrists snap or "pop" the barrelhead of the bat into the ball. Head and eyes are fixed on ball at point of contact. Wrists are extended and unbroken at impact. Hands are rolled over after hitting through the ball.

Checkpoints

- Grip: hands together, grip with fingers
- Stance: feet at least shoulder width apart and parallel, knees flexed, bat set by back shoulder, head steady, eyes focused on ball
- Swing: coil back with weight on rear foot, stride forward while pivoting hips and shoulders toward pitcher, snap wrist into ball, roll hands over on follow-through

Drills

Hitting the ball off a batting tee is an ideal way to develop the basic fundamentals of the swing. Using a tee with a stationary ball allows the batter to concentrate on correct mechanics until consistency is reached before adding the complexity of a moving ball.

1. Down the middle: Place tee in the center of the strike zone so that the ball is at proper contact point relative to the batter (opposite the front hip after the stride). Using proper form, player practices hitting line drives toward center field. After contact, player's eyes should be focused on the tee to ensure that the head remains down.

Variations: Place tee on outside corner, player practices hitting to right field (hips are closed at contact, facing slightly

toward back of strike zone). Place tee on inside of strike zone, player practices hitting to left field (hips are open, facing slightly toward the pitcher).

2. Double tees: Position another tee 3' to 4' in front of first tee. Batter tries to drive ball from first tee into ball on second tee, thus providing immediate feedback as to whether swing was fundamentally correct. If it misses, there most likely was an error in execution—hips opened too soon or too late, shoulders were uneven, wrists broke too soon, etc.

Variation: Place a ball on the front tee only, forcing batter to swing through the ball toward the intended line of flight.

3. Self toss: Hitter stands 5' from the fence, tosses ball to self and hits hard against the fence, concentrating on contact point, exploding power through ball, and keeping head down. (Use mats to protect the fence, or use whiffle balls.)

Baserunning

Although *running* is a fundamental motor ability, *baserunning* is a specific softball skill which involves more than natural speed. It is a skill that can be developed by improved concentration and technique. Running speed is dependent upon length and frequency of the stride. Stride length is the result of arm action, knee action, foot placement, and forward lean.

Arm action. With elbows bent at a 90° angle, arms swing easily and naturally in opposition to the legs. For greatest speed, the hands and arms move vigorously from chest height to a position down and back behind each hip. The vigorous drive of the arms down and back creates forward thrust. Arms should swing forward, not cross the midline of the body.

Drill: For a warm-up, students use arm action only as they simulate the running speed the teacher calls—slow, fast, medium, etc.

Knee action. Knees should be lifted high during running, to create an approximate 90° angle at the hip. High knee lifts contribute to increased stride length.

Drill: Extend arms out in front, palms down. Students run in place, lifting knees high enough to touch hands.

Foot placement. All force should be extended straight ahead. Runners should imagine running on a straight line with the inside of each foot touching the outside of the line.

Drill: Students practice running slowly on a marked line, observing their foot placement, making necessary corrections. Then, they practice running on an imaginary line, concentrating on foot placement, but with head and eyes up.

Forward lean. Body leans forward slightly from the ankles (not from the waist) to increase angle of propelling force and to get runner up on balls of feet. Proper forward lean increases length of stride.

Drill: Students practice leaning slightly forward from the ankles, to the point at which they begin to lose balance. To demonstrate importance of forward lean, students should measure each other's length of stride when (1) standing erect, lifting knee high, and stepping as far forward as possible, and (2) when standing with a forward lean, lifting the knee high, and stepping forward as far as possible.

Running the bases

Home to first base. After hitting the ball it is important to get out of the batter's box as quickly as possible and run at top speed toward first base. If it is obvious that there will be a play at first base, the runner runs in a straight

line (slightly to the outside of the base path) to and through first base, touching the front outside corner of the base with the left foot. First base should be overrun at full speed.

Rounding a base. If there is a chance that the runner can advance to the next base, he/she should swing outside of the baseline (starting at least 15' from the base) arcing a path out and back in toward the base, as in Figure 9. The left foot touches the inside of the base, with the right foot swinging over it. Player should lean to the inside while making the turn, then proceed at top speed toward the next base,

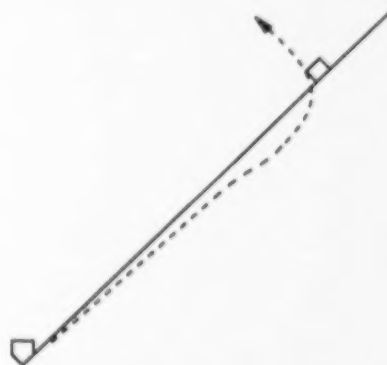


Figure 9. Rounding first base

or stop and return if approaching it safely appears unlikely. Turn should be made smoothly with no break in stride.

Drills: Players practice leaving the batter's box and running at reduced speed to and around first base until the technique is correct. Players hit ball hard off batting tee and practice running as fast as possible to second base, third base, etc. Runs to the various distances should be timed so that improvement in speed and technique can be monitored. Players should hit ball hard, through the infield, to make the practice drill as gamelike as possible.

Checkpoints

- Running form:
 - Arms: elbows bent at 90° angle, arms drive vigorously from chest down and past hips, arms swing straight ahead, not across body
 - Knees: lifted high forming 90° hip angle
 - Foot placement: straight ahead, with instep touching outside of imaginary line
 - Body leans forward from ankles, not from waist, head and eyes are up
- Baserunning:
 - Home to first: get out of batter's box fast, overrun first at full speed
 - Home to second: swing outside of baseline and arc back toward first base, touch inside corner of base with left foot, smooth turn without breaking stride

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APPENDICES

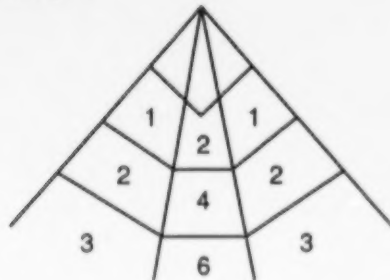


APPENDIX A

Personal Data Record - AAHPERD Softball Skill Tests

Name _____ Grade Level _____ Sex: M F Date _____

Batting:*



Trials: 1 2 3 4 5 6 Total

--	--	--	--	--	--	--

*Scorer should stand in center field to have the best view of the scoring zones. Use a "✓" on diagram to indicate where ball stops rolling.

Fielding:

Trials: 1 2 3 4 5 6 Total

--	--	--	--	--	--	--

Throwing:

Trials (circle the better score)

1	2

Running:

Trials (circle the better score)

1	2

SUMMARY DATA:	Raw Score	%ile	T-Score
Batting	_____	_____	_____
Fielding	_____	_____	_____
Throwing	_____	_____	_____
Running	_____	_____	_____

APPENDIX B

Sample Group Recording Forms - AAHPERD Softball Skill Tests

Batting

Grade _____



Trials: 1 2 3 4 5 6 Total

--	--	--	--	--	--	--	--

Name _____ Sex: M F



Trials: 1 2 3 4 5 6 Total

--	--	--	--	--	--	--	--

Name _____ Sex: M F



Trials: 1 2 3 4 5 6 Total

--	--	--	--	--	--	--	--

Name _____ Sex: M F



Trials: 1 2 3 4 5 6 Total

--	--	--	--	--	--	--	--

Name _____ Sex: M F

For the most efficient data recording (less paper shuffling), copy as many field diagrams as possible onto one page. Scorers should stand in center field to have the best view of scoring zones. Use a "✓" on the diagram to indicate where the ball stops rolling.

Fielding, Throwing, & Running

Grade _____

Name	Sex	Fielding							Throwing		Running	
		Trials						Total	Trials*		Trials*	
		1	2	3	4	5	6		1	2	1	2
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												

*Circle the better score.

APPENDIX C

Softball Skills Rating Scales

Catching Rating Scale

- 4 - Excellent form
- 3 - Form is acceptable, minor improvements are possible as indicated
- 2 - Form is fair, considerable improvement is possible as indicated
- 1 - Form is incorrect

Comments:

Catching (General Techniques):

- | | |
|--|------------------------|
| <ul style="list-style-type: none"> ● Body in line with incoming ball, ball is caught with two hands; glove and bare hand fingers are up for balls above waist (thumbs together) and down for balls below waist (little fingers together). | 4 3 2 1 |
| <ul style="list-style-type: none"> ● Ball is met in front of body, hands and arms give with ball to cushion the shock. | 4 3 2 1 |

Fielding Fly Balls:

- | | |
|---|------------------------|
| <ul style="list-style-type: none"> ● Player should be under the ball, standing motionless as it comes down; arms are extended out front, fingers of both hands are up, thumbs together; give with ball to cushion shock. | 4 3 2 1 |
|---|------------------------|

Fielding Ground Balls:

- | | |
|--|------------------------|
| <ul style="list-style-type: none"> ● Ready position: feet are shoulder width apart, glove-side foot is slightly ahead, knees are bent, back flat, glove is wide open and low to ground with fingers pointing down, eyes on ball. | 4 3 2 1 |
| <ul style="list-style-type: none"> ● Execution: move quickly into position to field the ball, assume correct stance with glove on the ground, watch ball into glove, cover it with throwing hand, bring ball in to stomach and up into throwing position. | 4 3 2 1 |

Overhand Throw Rating Scale

- 4 - Excellent form
- 3 - Form is acceptable, minor improvements are possible as indicated
- 2 - Form is fair, considerable improvement is possible as indicated
- 1 - Form is incorrect

Comments:

Preparation:

- | | | | | |
|--|---|---|---|---|
| • Two finger grip across seams, grip with fingers, not palm (for small hands, all fingers are used). | 4 | 3 | 2 | 1 |
| • Body turned toward throwing side, weight on back foot, throwing arm stretched back, glove arm pointed at target. | 4 | 3 | 2 | 1 |

Execution:

- | | | | | |
|--|---|---|---|---|
| • Push off with back foot, step toward target with opposite foot, elbow stays high and leads throwing arm toward target. | 4 | 3 | 2 | 1 |
| • Wrist is snapped on release, fingers are thrown toward target, thumb is pointed down. | 4 | 3 | 2 | 1 |

Batting Rating Scale

- 4 - Excellent form
- 3 - Form is acceptable, minor improvements are possible as indicated
- 2 - Form is fair, considerable improvement is possible as indicated
- 1 - Form is incorrect

Comments:

Grip:

- Hands together, dominant hand on top; pressure is applied by fingers, not palms. 4 3 2 1

Stance:

- Feet are shoulder width apart and parallel, knees are flexed, hips are facing plate. 4 3 2 1
- Arms are flexed, hands are comfortably away from body and "set" at top of strike zone by back shoulder, eyes are focused on ball. 4 3 2 1

Swing:

- To initiate swing, bat, arms, shoulders, and hips are coiled back with weight on back foot. 4 3 2 1
- Forward swing begins with stride toward pitcher while pushing off with back foot and pivoting hips and shoulders forward; wrists snap into ball, hands roll over on follow-through. 4 3 2 1
- Balance is maintained throughout swing, shoulders stay as level as possible, head stays down through point of contact. 4 3 2 1

Baserunning Rating Scale

- 4 - Excellent form
- 3 - Form is acceptable, minor improvements are possible as indicated
- 2 - Form is fair, considerable improvement is possible as indicated
- 1 - Form is incorrect

Comments:

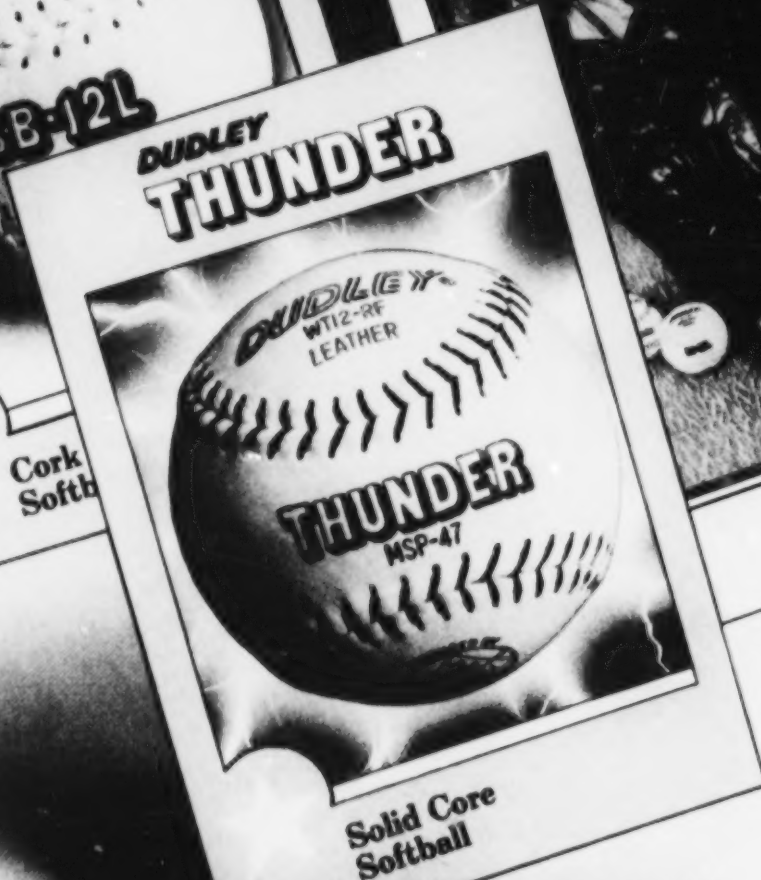
Running Form:

- | | | | | |
|---|---|---|---|---|
| • Arms: elbows bent at 90° angle, arms drive vigorously from chest down and past hips, arms swing straight ahead (not across body). | 4 | 3 | 2 | 1 |
| • Knees: knees are high, forming 90° hip angle. | 4 | 3 | 2 | 1 |
| • Foot placement: straight ahead with in-steps touching outside of imaginary line. | 4 | 3 | 2 | 1 |
| • Body leans slightly forward from ankles, not from waist; head and eyes are up. | 4 | 3 | 2 | 1 |

Baserunning:

- | | | | | |
|---|---|---|---|---|
| • Home to first: quick out of batter's box, overrun first base at full speed. | 4 | 3 | 2 | 1 |
| • Home to second: swing outside of baseline and arc back in toward first base, touch inside corner of base with left foot, smooth turn without breaking stride. | 4 | 3 | 2 | 1 |

TRIPLE THREAT



DUDLEY

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